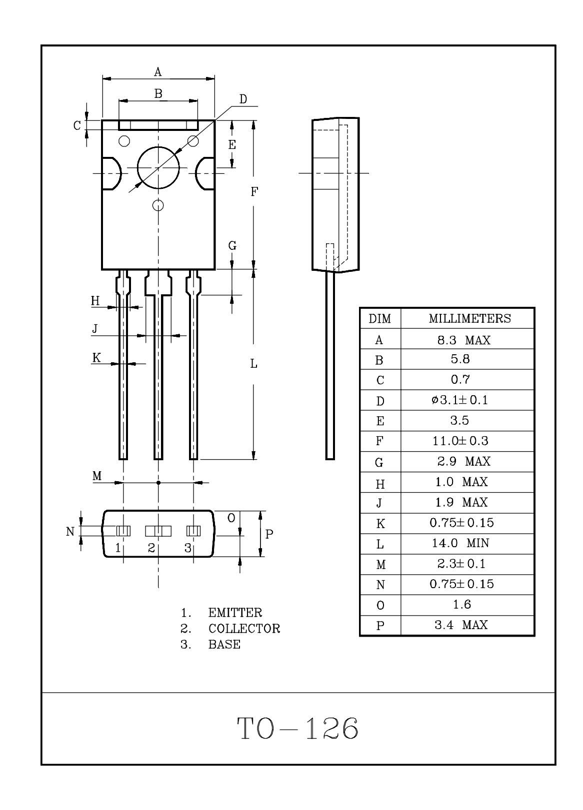


13003

SWITCHING REGULATOR APPLICATION.
HIGH VOLTAGE AND HIGH SPEED
SWITCHING APPLICATION.



DIM	MILLIMETERS
A	8.3 MAX
B	5.8
C	0.7
D	ø3.1±0.1
E	3.5
F	11.0±0.3
G	2.9 MAX
H	1.0 MAX
J	1.9 MAX
K	0.75±0.15
L	14.0 MIN
M	2.3±0.1
N	0.75±0.15
O	1.6
P	3.4 MAX

TO－126

FEATURES

- Excellent Switching Times
  : t_{on}=1.1μS(Max.), t_f=0.7μS(Max.), at I_C=1A
- High Collector Voltage : V_{CBO}=700V.

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	700	V
Collector-Emitter Voltage		V_{CEO}	400	V
Emitter-Base Voltage		V_{EBO}	9	V
Collector Current	DC	I_C	1.5	A
	Pulse	I_{CP}	3	
Base Current		I_B	0.75	A
Collector Power Dissipation (Tc=25℃)		P_C	20	W
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-65～150	℃

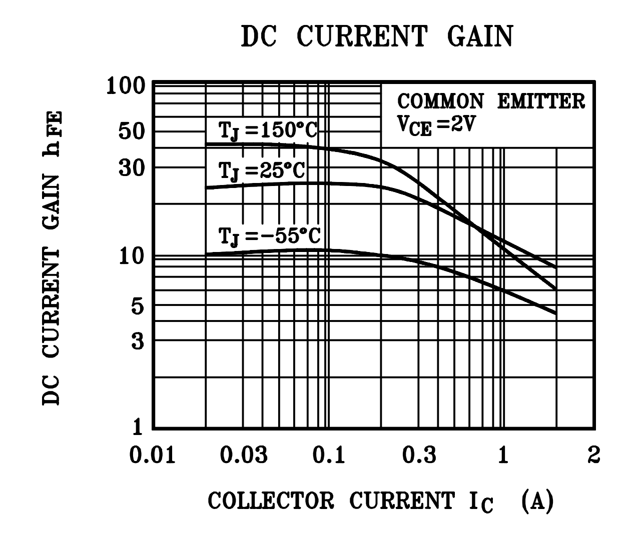
ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Emitter Cut-off Current	I_{EBO}	V_{EB}=9V, I_C=0	-	-	10	μA
DC Current Gain	h_{FE}(1)Note	V_{CE}=2V, I_C=0.5A	19	-	36	
	h_{FE}(2)	V_{CE}=2V, I_C=1A	5	-	25	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=0.5A, I_B=0.1A	-	-	0.5	V
		I_C=1A, I_B=0.25A	-	-	1	
		I_C=1.5A, I_B=0.5A	-	-	3	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=0.5A, I_B=0.1A	-	-	1	V
		I_C=1A, I_B=0.25A	-	-	1.2	
Collector Output Capacitance	C_{ob}	V_{CB}=10V, f=0.1MHz	-	21	-	pF
Transition Frequency	f_T	V_{CE}=10V, I_C=0.1A	4	-	-	MHz
Turn-On Time	t_{on}	300μS; I_{B1}; I_{B2}; INPUT; I_{B1}; I_{B2}; OUTPUT; 125Ω; I_{B1}= I_{B2}= 0.2A; DUTY CYCLE ≤ 2%; V_{CC}=125V	-	-	1.1	μS
Storage Time	t_{stg}		-	-	4.0	μS
Fall Time	t_f		-	-	0.7	μS

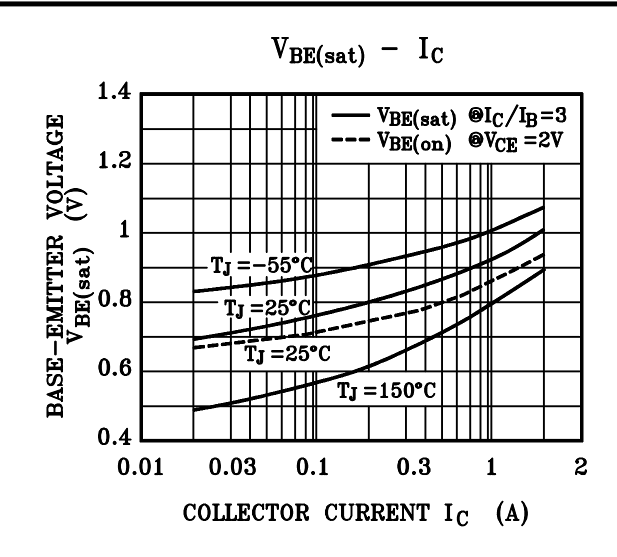
Note : h_{FE}(1) Classification : O:19～28 , Y:26～36



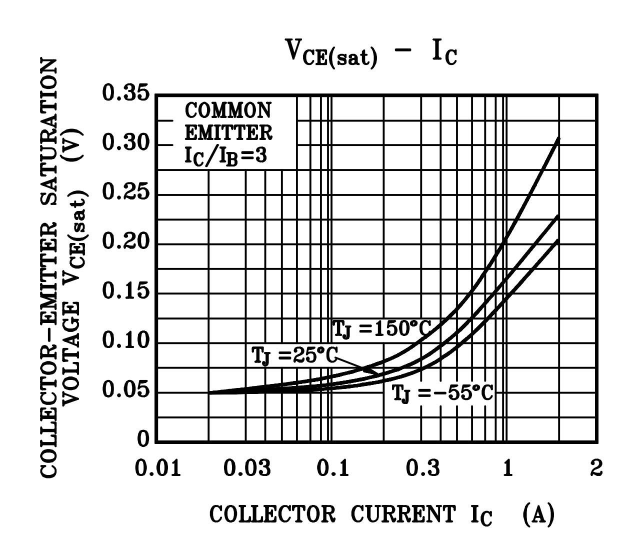
13003



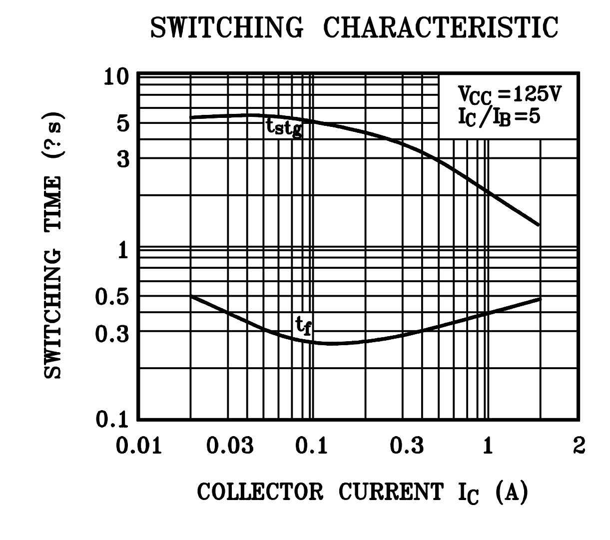
DC CURRENT GAIN
COMMON EMITTER
VCE =2V
TJ =150°C
TJ =25°C
TJ =−55°C
DC CURRENT GAIN hFE
100
50
30
10
5
3
1
0.01
0.03
0.1
0.3
1
2
COLLECTOR CURRENT IC (A)



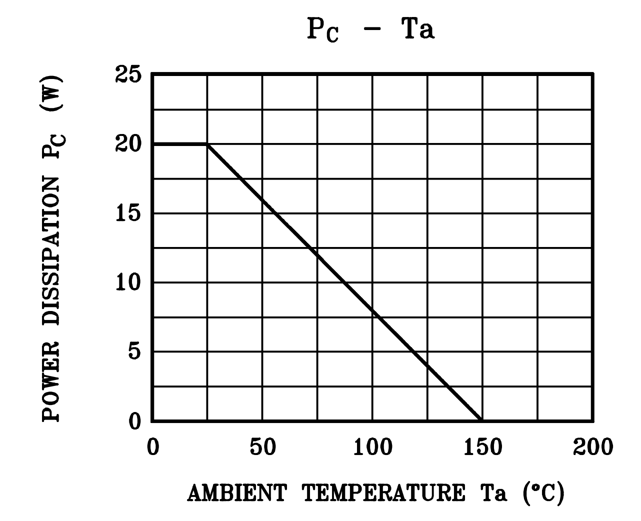
VBE(sat) − IC
VBE(sat) @IC/IB=3
VBE(on) @VCE =2V
TJ =−55°C
TJ =25°C
TJ =25°C
TJ =150°C
BASE−EMITTER VOLTAGE VBE(sat) (V)
1.4
1.2
1
0.8
0.6
0.4
0.01
0.03
0.1
0.3
1
2
COLLECTOR CURRENT IC (A)



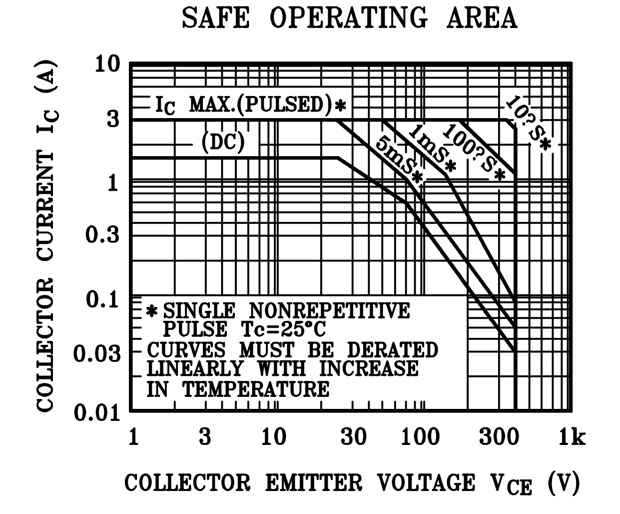
VCE(sat) − IC
COMMON EMITTER
IC/IB=3
TJ =150°C
TJ =25°C
TJ =−55°C
COLLECTOR−EMITTER SATURATION VOLTAGE VCE(sat) (V)
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0
0.01
0.03
0.1
0.3
1
2
COLLECTOR CURRENT IC (A)



SWITCHING CHARACTERISTIC
VCC =125V
IC/IB=5
tstg
tf
SWITCHING TIME (?s)
10
5
3
1
0.5
0.3
0.1
0.01
0.03
0.1
0.3
1
2
COLLECTOR CURRENT IC (A)



PC − Ta
POWER DISSIPATION PC (W)
25
20
15
10
5
0
0
50
100
150
200
AMBIENT TEMPERATURE Ta (°C)



SAFE OPERATING AREA
IC MAX.(PULSED)*
(DC)
5mS*
1mS*
100?S*
10?S*
* SINGLE NONREPETITIVE PULSE Tc=25°C
CURVES MUST BE DERATED LINEARLY WITH INCREASE IN TEMPERATURE
COLLECTOR CURRENT IC (A)
10
3
1
0.3
0.1
0.03
0.01
1
3
10
30
100
300
1k
COLLECTOR EMITTER VOLTAGE VCE (V)